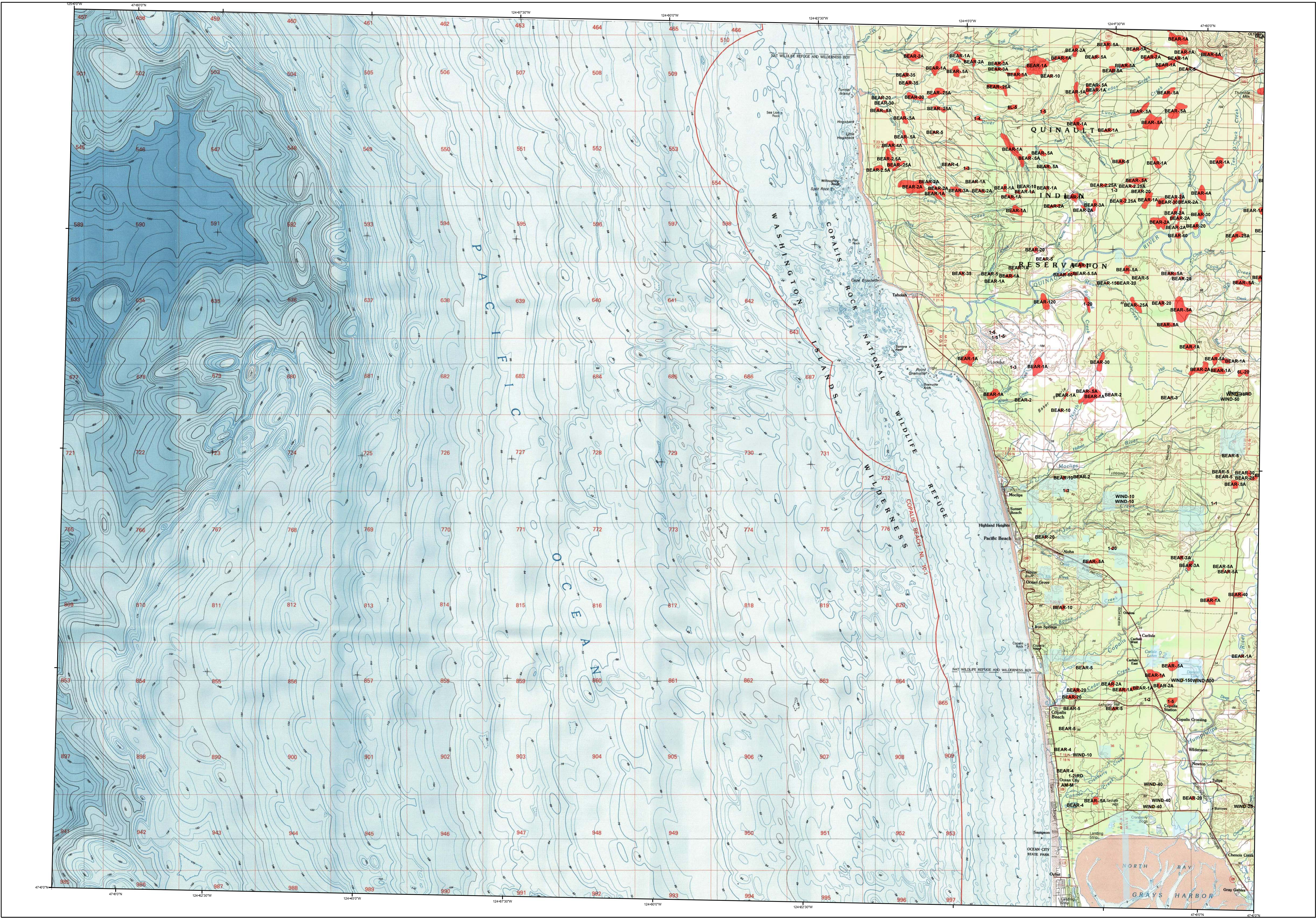


# 2007 Aerial Insect and Disease Survey

## USGS 100K Quad: Copalis Beach - A147124; 1D



Defoliators		Mortality Agents	
Code	Damaging Agent	Code	Damaging Agent
AS	Spruce aphid	1	Douglas-fir beetle
BS	Western blackheaded budworm	2	Douglas-fir engraver
BM	Modoc budworm	3	Spruce beetle
BP	Sugar pine tortrix	4	Fr engraver
BS	Western spruce budworm	5	Sub-alpine fr
BY	Bryum's signis/ophiodermella	6	Jeffrey pine
CH	Larch	6A	Mountain pine beetle
HL	Western hemlock looper	6B	Mountain pine beetle
L.O	Green striped forest looper	6C	Mountain pine beetle
LL	Larch looper	6D	Mountain pine beetle
LS	Black pine needle scale	6E	Mountain pine beetle
MD	Douglas fir budmoth	6F	Mountain pine beetle
ML	Larch budmoth	6G	Mountain pine beetle
MN	Douglas fir needle midge	6H	Mountain pine beetle
MS	Spruce budmoth	6I	Mountain pine beetle
ND	Needle miner	6J	Mountain pine beetle
NJ	Needle miner	6K	Mountain pine beetle
NK	Needle miner	6L	Mountain pine beetle
NL	Needle miner	6M	Mountain pine beetle
NP	Needle miner	6N	Mountain pine beetle
NS	Needle miner	6O	Mountain pine beetle
NT	Needle miner	6P	Mountain pine beetle
NW	Needle miner	6Q	Mountain pine beetle
OL	Western oak looper	6R	Mountain pine beetle
PC	Pine needle cast	6S	Mountain pine beetle
PH	Phantom hemlock looper	6T	Mountain pine beetle
PM	Pandora moth	6U	Mountain pine beetle
PN	Pine needle scale	6V	Mountain pine beetle
PS	Pine needle scale	6W	Mountain pine beetle
RC	Needle cast	6X	Mountain pine beetle
S	Sooty scale	6Y	Mountain pine beetle
SA	Sawfly	6Z	Mountain pine beetle
SD	Sawfly	6AA	Mountain pine beetle
SH	Sawfly	6AB	Mountain pine beetle
SK	Sawfly	6AC	Mountain pine beetle
SL	Sawfly	6AD	Mountain pine beetle
SM	Sawfly	6AE	Mountain pine beetle
SNC	Swiss needle cast	6AF	Mountain pine beetle
SP	Sawfly	6AG	Mountain pine beetle
SW	Sawfly	6AH	Mountain pine beetle
TA	Tent caterpillar, alder	6AI	Mountain pine beetle
TC	Tent caterpillar, other	6AJ	Mountain pine beetle
TD	Douglas fir tussock moth	6AK	Mountain pine beetle
TS	Tent caterpillar, aspen	6AL	Mountain pine beetle

**USGS 100K Quad: Copalis Beach - A147124; 1D**  
**2007 Aerial Insect and Disease Detection Survey**  
**Mapscale: 1:100,000**  
**Date: November 23, 2007**

### Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- WaDNR Managed Lands

The map base was created with TOPOI (Copyright 2001, National Geographic); available online at: [www.ngmapstore.com](http://www.ngmapstore.com)

A data dictionary, digital copies of this map and ArGIS insect and disease data are available at: [www.fs.fed.us/r6/nr/1d/data.shtml](http://www.fs.fed.us/r6/nr/1d/data.shtml)

Vicinity Map

### How the Aerial Surveys are Conducted

Data represented on this map are based on trees visibly affected by forest insects and diseases detected and recorded during aerial survey flights conducted by the USDA Forest Service and the Washington Department of Natural Resources. Observers have just a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal agents correctly; estimate intensity; delineate the extent of damage; and precisely record this information on a georeferenced, digital map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

The aerial survey provides information on the current status for many causal agents, and is important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a 'snap shot' in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Specially designed surveys with modified flight patterns and timing may be conducted to more accurately delineate the extent and severity of a particular disturbance agent. Special surveys, such as Swiss needle cast surveys, are conducted when resources are available to address situations of sufficient economic, political or environmental importance.

**DIRECT ALL INQUIRIES TO:**

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Natural Resources  
Resource Protection  
Forest Health  
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Olympia, WA 98504

-- OR --

USDA Forest Service, Region 6  
Natural Resources  
Forest Health Protection  
PO Box 3623  
Portland, Oregon 97208

\*\*\*\*DISCLAIMER\*\*\*\*

The insect and disease data presented should only be used as an indicator of insect and disease activity, and should be ground-checked for precise location, extent, severity and causal agent.

Color coded polygons show locations where trees were recently killed or defoliated. Intensity of damage is variable and not all trees within coded polygons are dead or defoliated.

The cooperators reserve the right to correct, update, modify or replace GIS products without notice. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.